What is claimed is:

1. An LNG full containment system, comprising:

a floor slab;

a primary container positioned on the floor slab, the primary container being insulated to hold liquefied natural gas; and

a secondary container peripherally positioned around the primary container, the secondary container comprising a plurality of composite walls attached to the floor slab, with each of the composite walls being formed from a plurality of prefabricated wall panels configured to be adjoined in side-to-side fashion; and

wherein each of the prefabricated wall panels is formed from a combination of steel and concrete such that the prefabricated wall panel comprises:

a concrete plate having a longitudinal axis and an outer surface, and

at least one steel beam connected to the outer surface of the concrete plate along the longitudinal axis of the concrete plate.

2. The LNG full containment system of claim 1, wherein the plurality of composite walls of the secondary container comprises:

a first end wall;

a second end wall; and

at least two side walls, with each of the at least two side walls being disposed on opposing sides of the first end wall.

3. The LNG full containment system of claim 1, wherein each of the prefabricated wall panels further comprises:

a moisture barrier disposed on the concrete plate opposite the at least one steel beam.

4. The LNG full containment system of claim 3, wherein each of the prefabricated wall panels further comprises:

an insulation layer along the moisture barrier opposite the at least one steel beam; and

a liner plate on the insulation layer.

5. The LNG full containment system of claim 3, wherein the moisture barrier is fabricated from material selected from the group consisting of: a metallic material and a polymeric material.

6. The LNG full containment system of claim 1, further comprising:

a roof structure, the roof structure comprising a plurality of prefabricated roof panels adjoined in side-to-side fashion, each of the roof panels comprising:

a concrete plate having an inner surface, and

a steel truss structure under the inner surface of the concrete plate.

7. The LNG full containment system of claim 1, wherein:

the plurality of composite walls of the secondary container comprises:

a first end wall;

a second end wall; and

at least two side walls, with each of the at least two side walls being disposed on opposing sides of the first end wall;

each of the prefabricated wall panels comprises:

a moisture barrier disposed on the concrete plate opposite the at least one steel beam,

an insulation layer along the moisture barrier, and

a liner plate on the insulation layer; and

the secondary container further comprises a roof structure, the roof structure comprising a plurality of prefabricated roof panels adjoined in side-to-side fashion, each of the roof panels comprising:

a concrete plate having an inner surface, and

a steel truss structure under the inner surface of the concrete plate.

8. A method of assembling an LNG full containment system, comprising the steps of:

pouring a floor slab fabricated at least in part from concrete;

erecting a first end wall on the floor slab;

erecting first and second side walls on the floor slab, the first and second side walls being connected to the first end wall at opposite ends, but being angled relative to the first end wall to leave an opening for receiving a second end wall so that a polygonal enclosure having at least four sides may be formed;

providing a roof structure that is supported at least in part by the side walls;

moving a substantially assembled primary container into the secondary container; and

erecting the second end wall so as to enclose the primary container within the secondary container.

9. The method of claim 8, wherein:

each of the end walls and each of the side walls is fabricated by adjoining a plurality of prefabricated wall panels in side-to-side fashion, with each of the prefabricated wall panels comprising:

a concrete plate having a longitudinal axis and an outer surface, and

at least one steel beam connected to the outer surface of the concrete plate along the longitudinal axis of the concrete plate.

10. The method of claim 9, wherein each of the prefabricated wall panels further comprises:

a moisture barrier disposed on the concrete plate opposite the at least one steel beam.

11. The secondary container of claim 10, wherein each of the prefabricated wall panels further comprises:

an insulation layer along the moisture barrier opposite the at least one steel beam; and

a liner plate on the insulation layer.

12. The method of claim 8, wherein:

the roof structure is fabricated by adjoining prefabricated roof panels in side-to-side fashion, with each of the prefabricated roof panels comprising:

a concrete plate having an inner surface, and

a steel truss structure connected to the inner surface of the concrete plate.

13. The method of claim 8, wherein said providing a roof structure includes:

providing a steel truss structure that is supported at least in part by the side walls;

providing a steel plate on top of said steel truss structure; and

pouring concrete onto said steel plate thereby forming a concrete plate having an inner surface and a steel truss structure supporting to the inner surface of the concrete plate.

14. The method of claim 8, wherein:

the polygon is a four-sided polygon; and

the first and second end walls and the first and second side walls connect together to form a rectangle.

15. The method of claim 8, wherein:

the polygon is a six-sided polygon; and

the method further comprises the step of erecting third and fourth side walls on the floor slab, the third and fourth side walls being connected to the first and second side walls, respectively, but also being angled to preserve the opening for receiving the second end wall so that the six-sided polygon may be formed.

16. The method of claim 8, wherein:

the primary container comprises a plurality of planar, vertical walls; and

further comprising the step of fabricating the vertical walls of the primary container at the same time that at least one of the side walls of the secondary container is being erected on the concrete floor slab.

17. The method of claim 8, wherein:

the step of moving the substantially assembled primary container into the secondary container is accomplished by using the opening for the second end wall as a means of access into the secondary container.

18. The method of claim 11, wherein the moisture barrier is fabricated from either a metallic material or a polymeric material.

19. A method for assembling an LNG full containment system, comprising the steps of:

pouring a floor slab fabricated at least in part from concrete;

erecting a plurality of vertical walls on the floor slab by adjoining a plurality of prefabricated wall panels in side-to-side fashion, with each of the prefabricated wall panels being formed from a combination of steel and concrete such that the prefabricated wall panel comprises a concrete plate and at least one steel beam attached to an outer surface of the concrete plate, but leaving an opening so that the plurality of vertical walls is not enclosed;

constructing a roof structure that covers the plurality of vertical walls to provide a roof for a secondary container, the roof structure being assembled by adjoining a plurality of prefabricated roof panels in side-to-side fashion, with each of the prefabricated roof panels being fabricated from a steel truss structure, and at least one concrete plate above the steel truss structure;

moving a substantially assembled primary container into the secondary container using the opening between the plurality of vertical walls as a means of access into the secondary container; and

erecting at least one final vertical wall on the floor slab so as to form a polygon having at least four sides and so as to enclose the primary container within the secondary container.

20. A wall panel for a secondary container, the secondary container being employed with a full containment LNG system, the wall panel comprising:

a concrete plate having an inner surface, an outer surface, and a longitudinal axis;

at least one steel beam connected to the concrete plate along the outer surface of the concrete plate, and along the longitudinal axis;

wherein the wall panel is configured so that a plurality of wall panels may be adjoined in side-to-side fashion so as to form a wall of a secondary container for the full containment LNG system.

21. The wall panel of claim 20, further comprising:

a moisture barrier disposed on the concrete plate opposite the at least one steel beam.

22. The wall panel of claim 21, further comprising:

an insulation layer along the moisture barrier opposite the at least one steel beam; and

a liner plate on the insulation layer.

23. A roof panel for a secondary container, the secondary container being employed with a full containment LNG system, the wall panel comprising:

an elongated steel truss structure;

a barrier layer placed over the steel truss structure; and

at least one thin concrete plate placed over the barrier layer along a longitudinal axis of the concrete plate; and

wherein the roof panel is configured so that a plurality of roof panels may be adjoined in side-to-side fashion so as to form a roof of a secondary container for the full containment LNG system.

24. The roof panel of claim 23, wherein the at least one concrete plate comprises a plurality of concrete plates joined together to form a grid.

25. The roof panel of claim 23, wherein the barrier layer is fabricated from a carbon steel.